COSEL

参考資料

TEST DATA OF MGS301212

Regulated DC Power Supply
January 6, 2011

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COSEL CO.,LTD.

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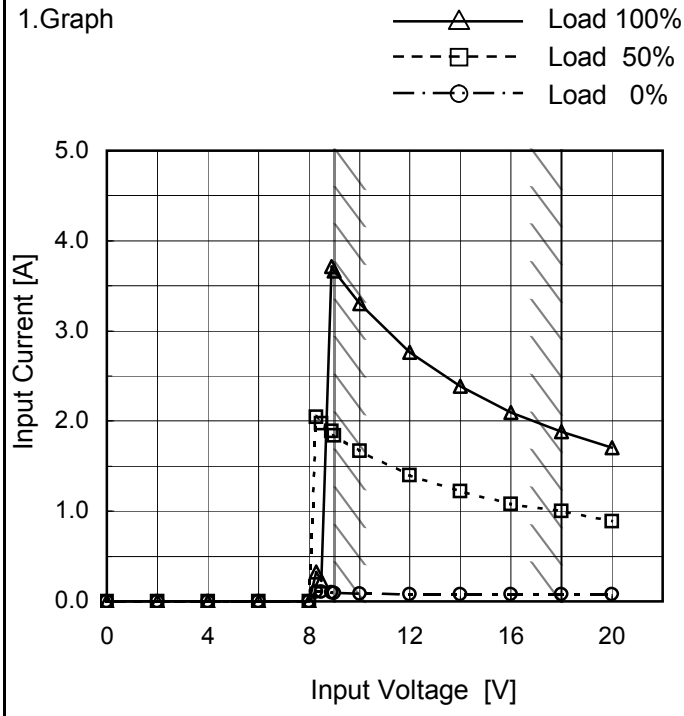
Model	MGS301212
Item	Input Current (by Input Voltage)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated input voltage.

2.Values

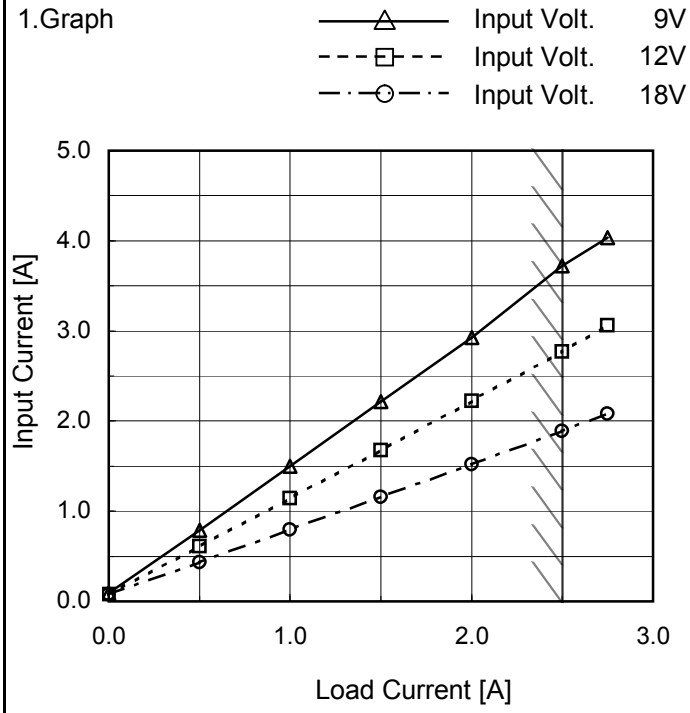
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
2.0	0.000	0.000	0.000
4.0	0.000	0.000	0.000
6.0	0.002	0.002	0.002
8.0	0.002	0.002	0.002
8.3	0.107	2.046	0.328
8.5	0.104	1.976	0.227
8.9	0.097	1.888	3.712
9.0	0.094	1.842	3.666
10.0	0.086	1.671	3.306
12.0	0.081	1.401	2.764
14.0	0.078	1.221	2.388
16.0	0.077	1.081	2.096
18.0	0.076	0.998	1.884
20.0	0.076	0.891	1.707
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS301212
Item	Input Current (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

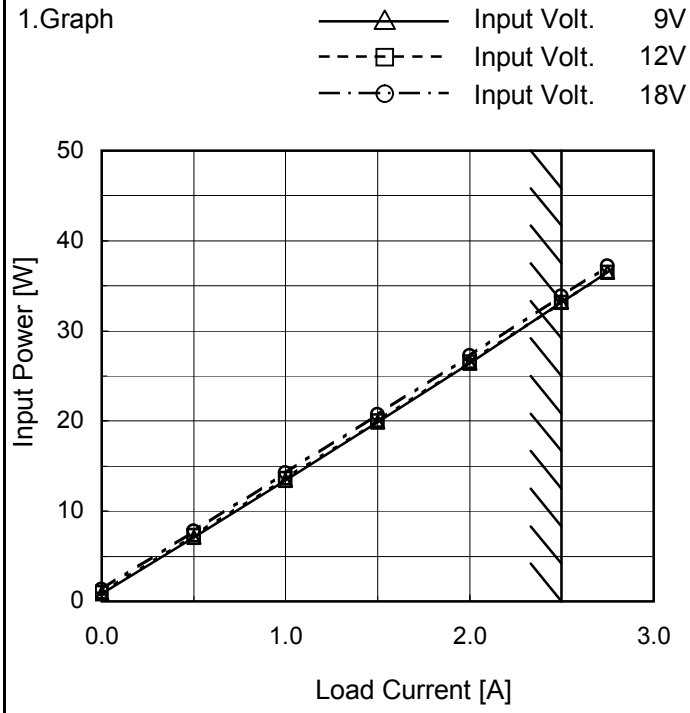
Load Current [A]	Input Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.00	0.095	0.080	0.075
0.50	0.790	0.610	0.433
1.00	1.497	1.142	0.797
1.50	2.218	1.676	1.155
2.00	2.924	2.220	1.522
2.50	3.724	2.770	1.890
2.75	4.036	3.062	2.078
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS301212
Item	Input Power (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

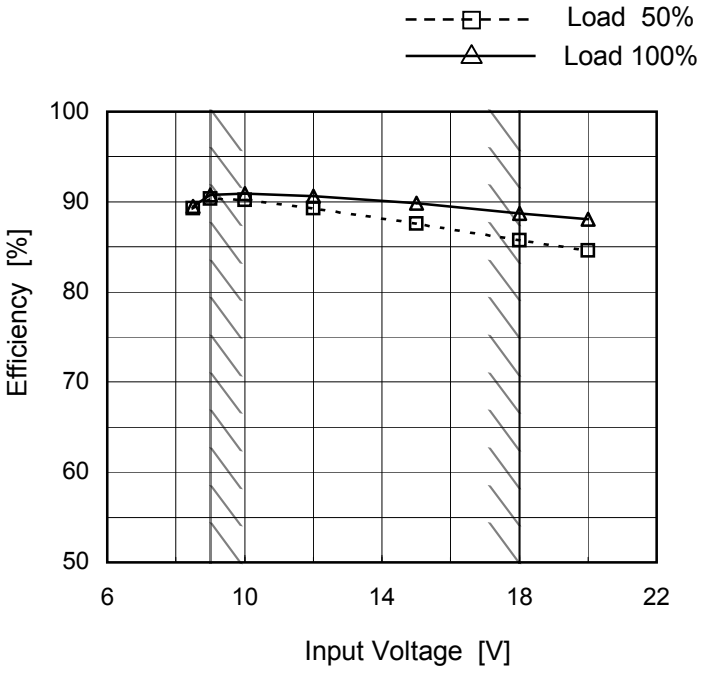
Load Current [A]	Input Power [W]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.00	0.85	0.96	1.36
0.50	7.12	7.28	7.79
1.00	13.45	13.66	14.28
1.50	19.90	20.05	20.76
2.00	26.43	26.58	27.26
2.50	33.15	33.20	33.90
2.75	36.54	36.54	37.20
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS301212
Item	Efficiency (by Input Voltage)
Object	――――――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated input voltage.

2.Values

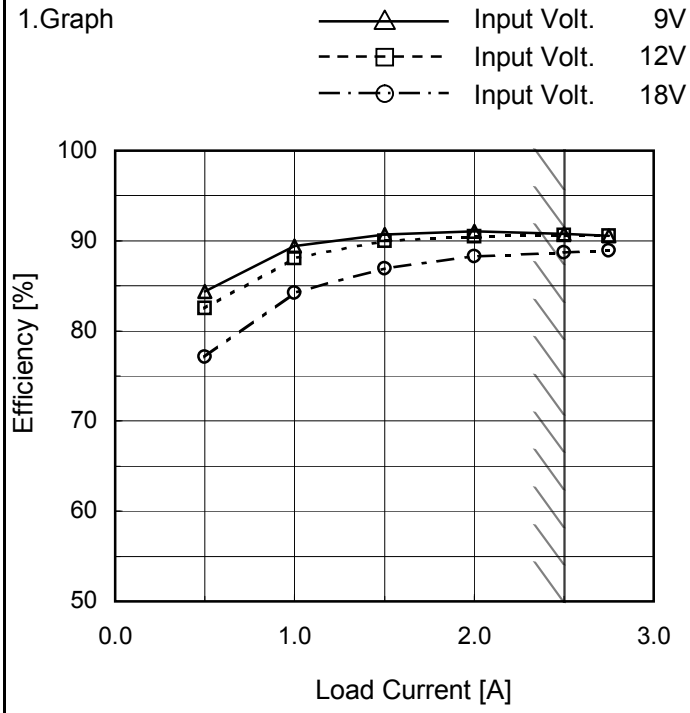
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
8.5	89.3	89.5
9.0	90.3	90.7
10.0	90.2	90.9
12.0	89.3	90.7
15.0	87.6	89.8
18.0	85.7	88.7
20.0	84.6	88.1
--	-	-
--	-	-

COSEL

Model	MGS301212
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

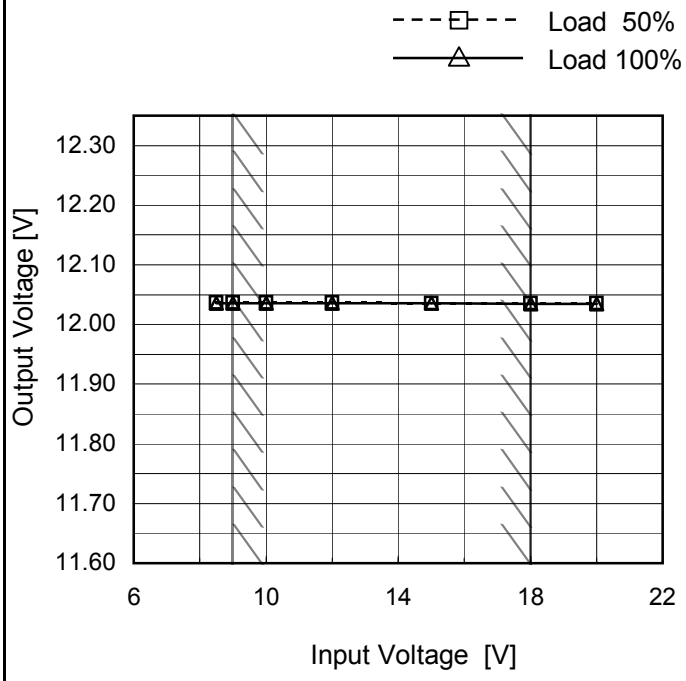
Load Current [A]	Efficiency [%]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.00	-	-	-
0.50	84.4	82.5	77.1
1.00	89.4	88.0	84.2
1.50	90.7	90.0	86.9
2.00	91.0	90.5	88.3
2.50	90.7	90.6	88.7
2.75	90.5	90.5	88.9
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS301212
Item	Line Regulation
Object	+12V2.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated input voltage.

2.Values

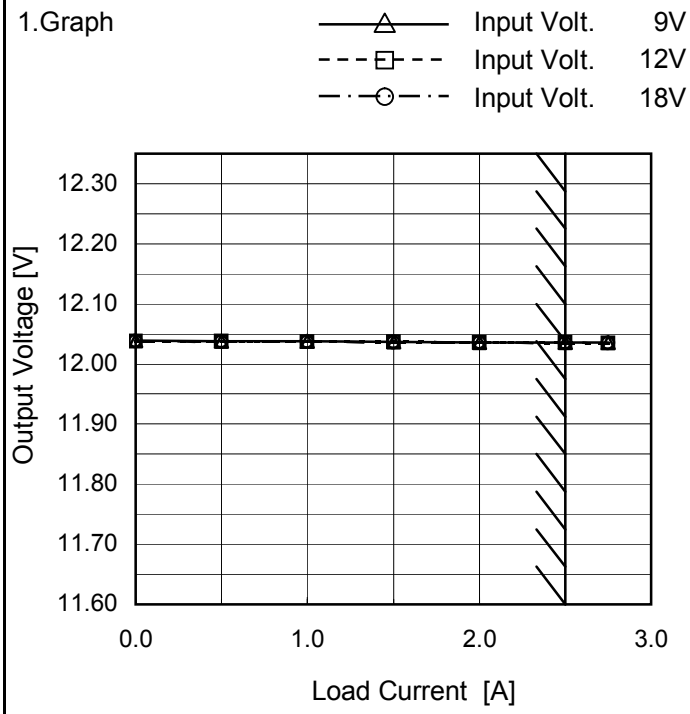
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8.5	12.037	12.035
9.0	12.037	12.035
10.0	12.037	12.035
12.0	12.036	12.035
15.0	12.036	12.035
18.0	12.036	12.035
20.0	12.036	12.035
--	-	-
--	-	-

COSEL

Model	MGS301212
Item	Load Regulation
Object	+12V2.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.00	12.039	12.038	12.038
0.50	12.038	12.038	12.037
1.00	12.037	12.037	12.037
1.50	12.037	12.036	12.036
2.00	12.036	12.036	12.035
2.50	12.036	12.035	12.035
2.75	12.035	12.035	12.035
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS301212
Item	Dynamic Load Response
Object	+12V2.5A

Temperature 25°C
Testing Circuitry Figure A

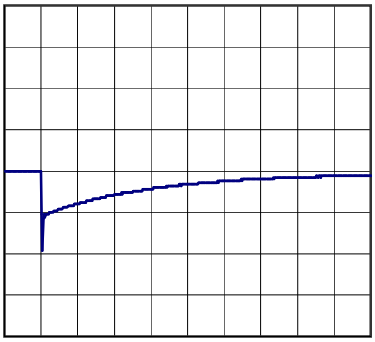
Input Volt. 12 V
Cycle 1000 ms

t_1、t_2 = 50μs

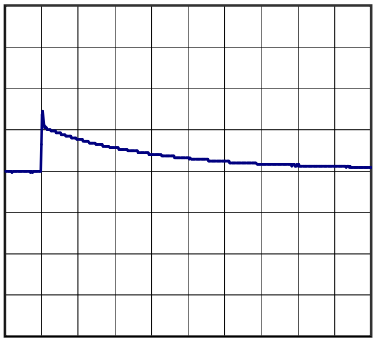
Load Current

Min. Load (0A) ⟷
Load 100% (2.5A)

200mV/div



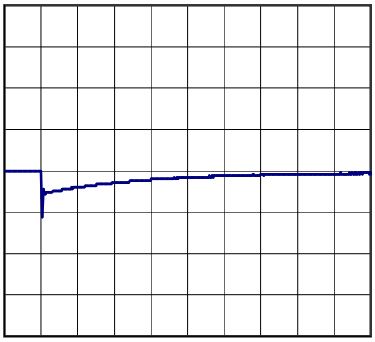
1ms/div



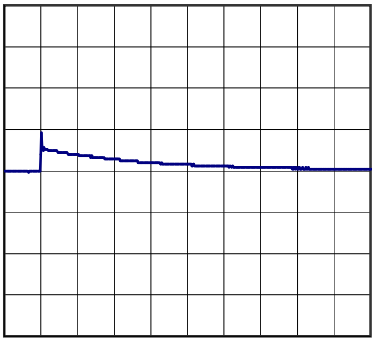
1ms/div

Min. Load (0A) ⟷
Load 50% (1.25A)

200mV/div



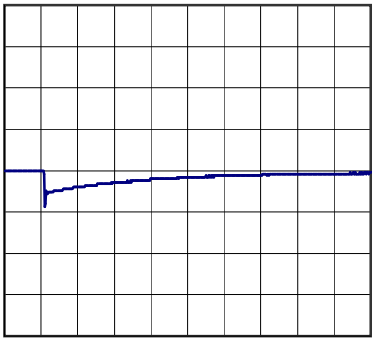
1ms/div



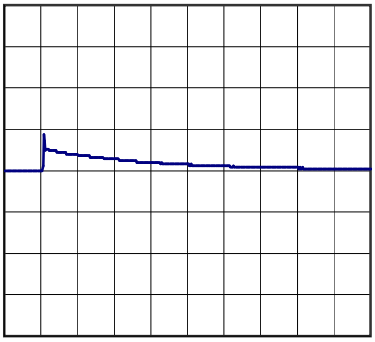
1ms/div

Load 50% (1.25A) ⟷
Load 100% (2.5A)

200mV/div



1ms/div



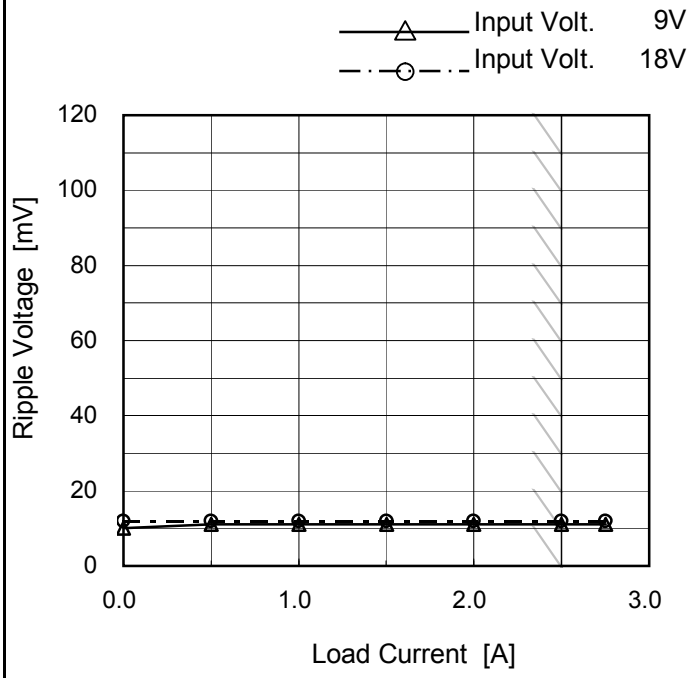
1ms/div

COSEL

Model	MGS301212
Item	Ripple Voltage (by Load Current)
Object	+12V2.5A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

Ripple [mVp-p]

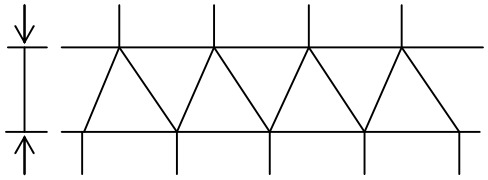


Fig.Complex Ripple Wave Form

2.Values

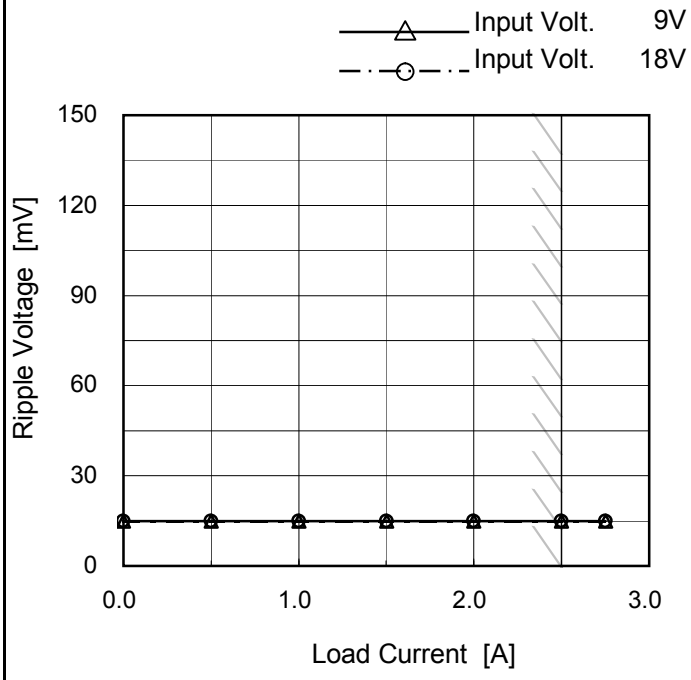
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.00	10	12
0.50	11	12
1.00	11	12
1.50	11	12
2.00	11	12
2.50	11	12
2.75	11	12
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS301212
Item	Ripple-Noise
Object	+12V2.5A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

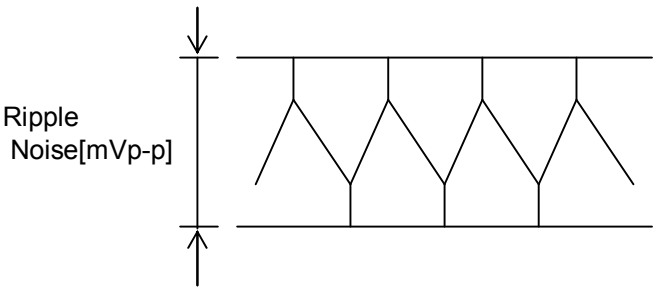


Fig.Complex Ripple Noise Wave Form

2.Values

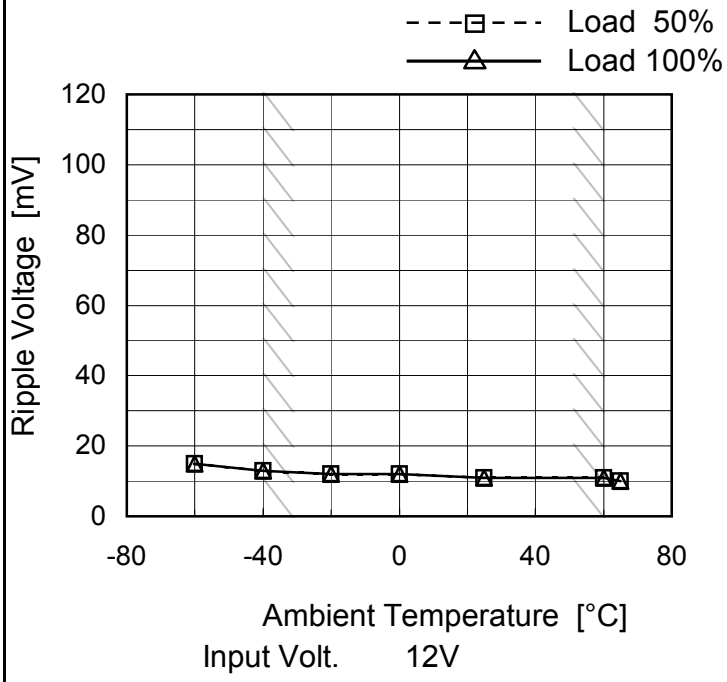
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.00	15	15
0.50	15	15
1.00	15	15
1.50	15	15
2.00	15	15
2.50	15	15
2.75	15	15
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS301212
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V2.5A

Testing Circuitry Figure B

1.Graph



Input Volt. 12V

Measured by 100 MHz Oscilloscope.
Note: Slanted line shows the range of the rated ambient temperature.

2.Values

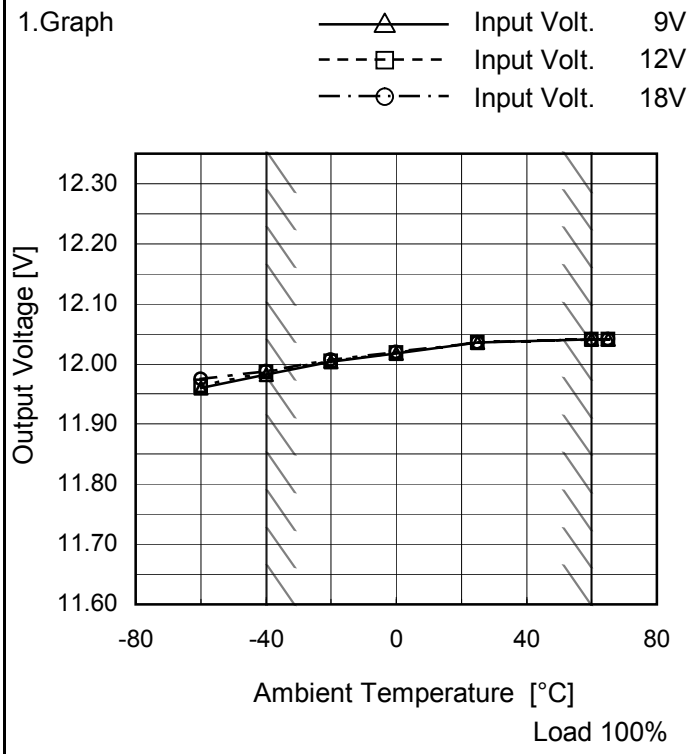
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	15	15
-40	13	13
-20	12	12
0	12	12
25	11	11
60	11	11
65	10	10
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS301212
Item	Ambient Temperature Drift
Object	+12V2.5A

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
-60	11.960	11.964	11.975
-40	11.983	11.986	11.988
-20	12.003	12.005	12.007
0	12.018	12.019	12.020
25	12.035	12.035	12.035
60	12.041	12.041	12.041
65	12.041	12.041	12.042
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	MGS301212	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V2.5A	

1.Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -40 - 60°C
Input Voltage : 9 - 18V
Load Current : 0 - 2.5A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

$$\text{* Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

2.Values

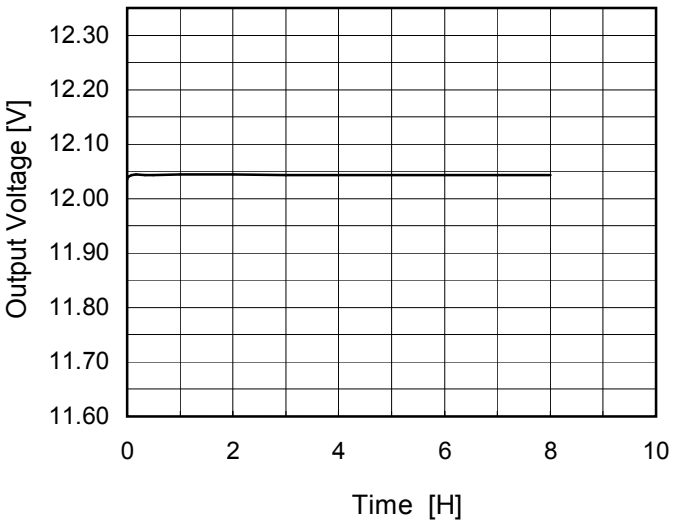
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	9	0	12.041	±30	±0.3
Minimum Voltage	-40	18	0	11.982		

COSEL

Model	MGS301212
Item	Time Lapse Drift
Object	+12V2.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 12V
Load 100%

2.Values

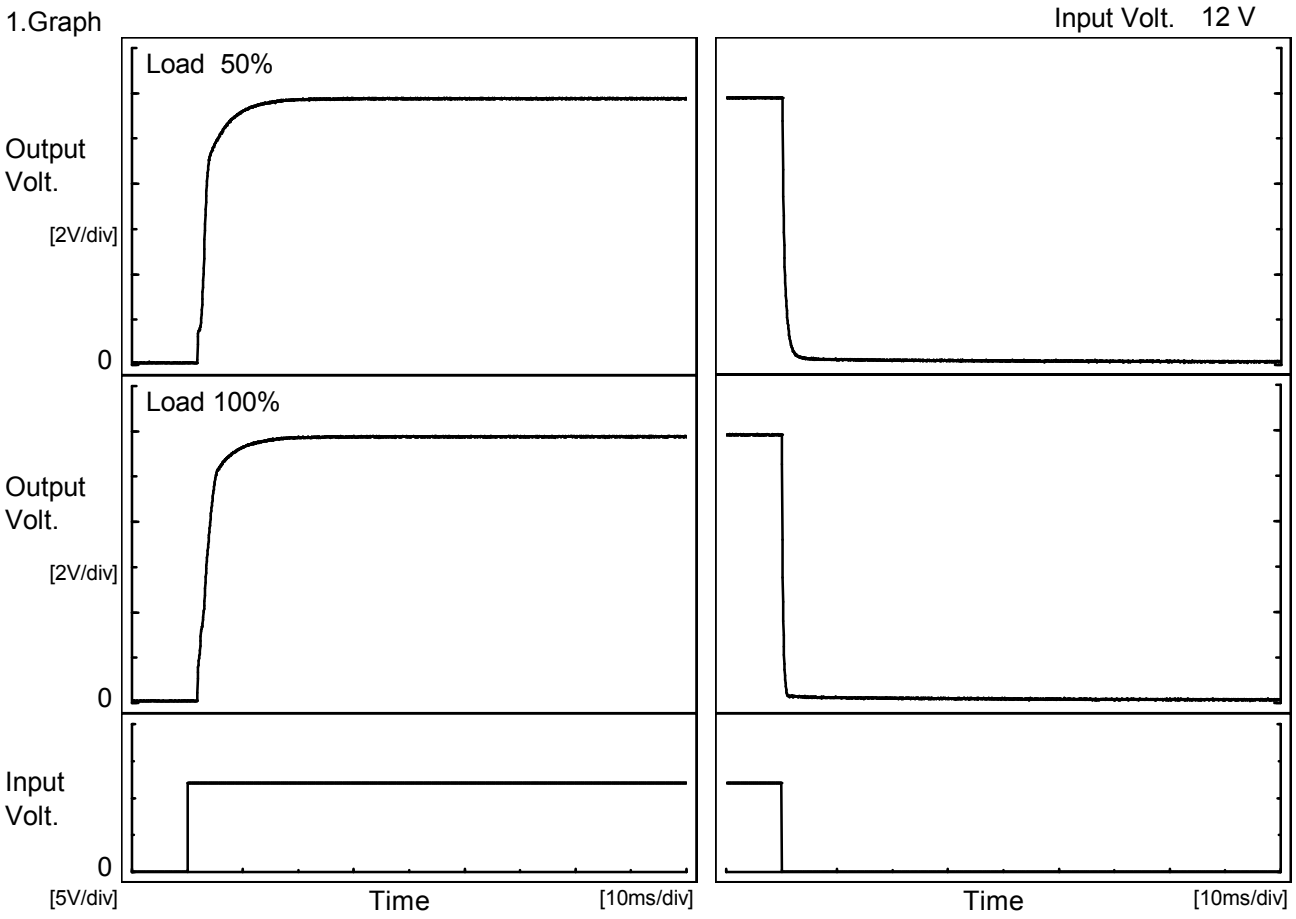
Time since start [H]	Output Voltage [V]
0.0	12.035
0.5	12.044
1.0	12.044
2.0	12.044
3.0	12.044
4.0	12.044
5.0	12.044
6.0	12.043
7.0	12.043
8.0	12.043

COSEL

Model	MGS301212
Item	Rise and Fall Time
Object	+12V2.5A

Temperature 25°C
Testing Circuitry Figure A

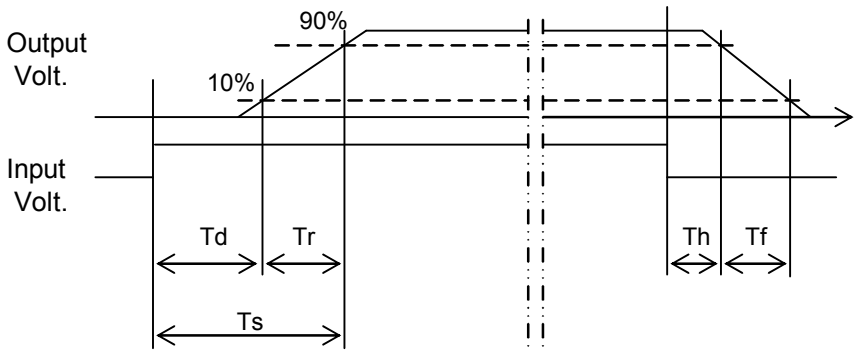
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	2.0	6.3	8.3	0.1	1.2
100 %	1.9	5.5	7.4	0.1	0.5

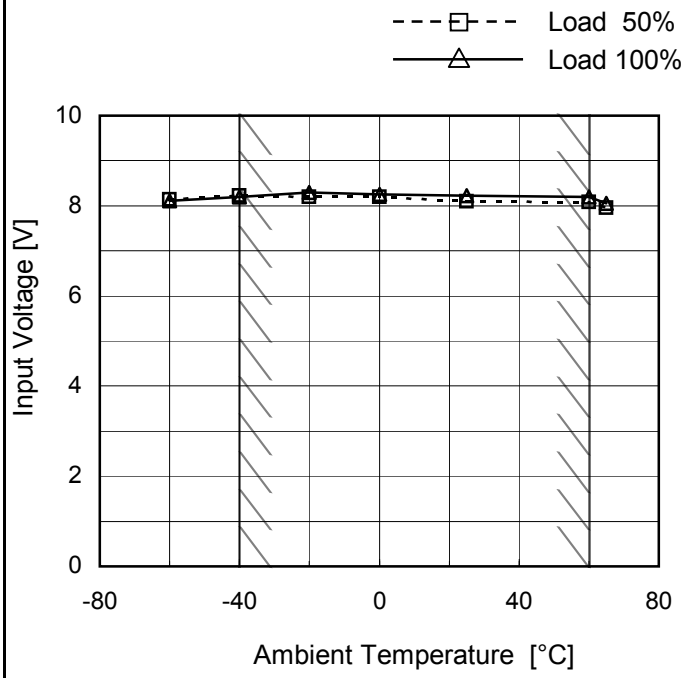


COSEL

Model	MGS301212
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V2.5A

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

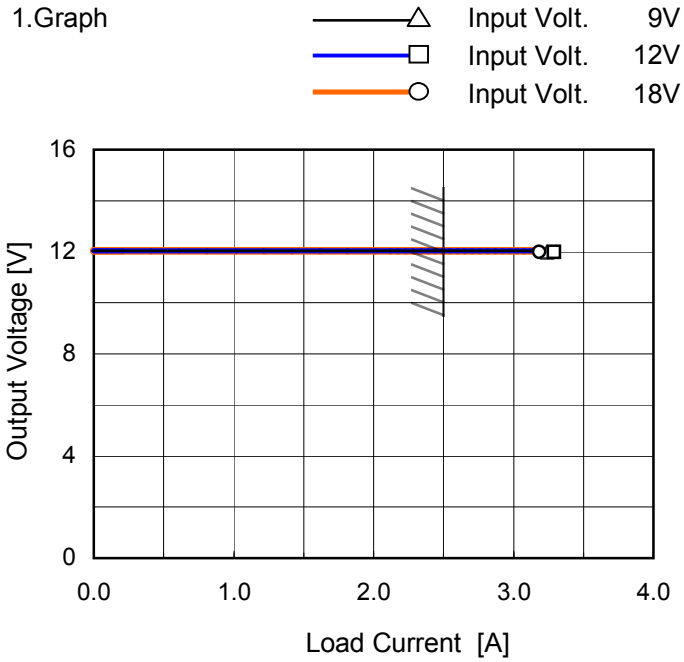
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	8.2	8.2
-40	8.3	8.2
-20	8.2	8.3
0	8.2	8.3
25	8.1	8.3
60	8.1	8.2
65	8.0	8.1
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MGS301212
Item	Overcurrent Protection
Object	+12V2.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

Intermittent operation occurs when overcurrent protection is activated.

2.Values

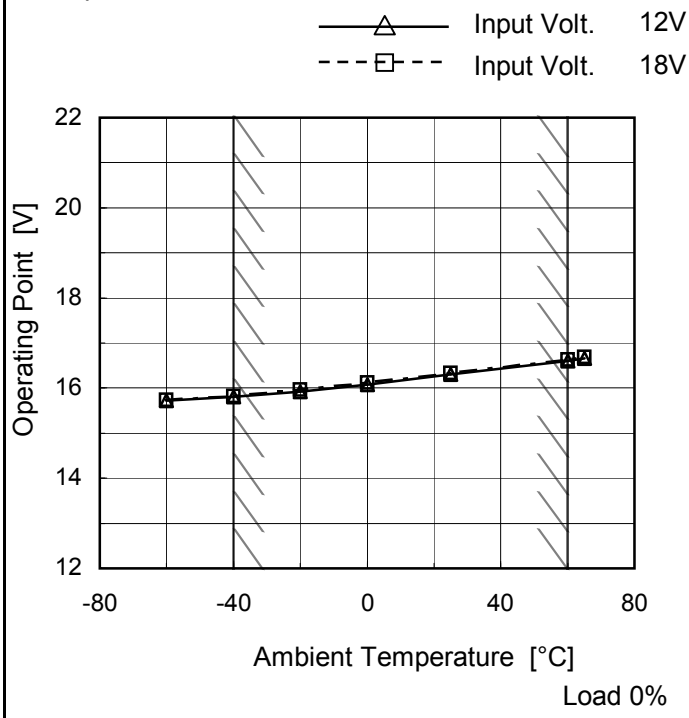
Output Voltage [V]	Load Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
12.0	3.24	3.29	3.18
11.4	-	-	-
10.8	-	-	-
9.6	-	-	-
8.4	-	-	-
7.2	-	-	-
6.0	-	-	-
4.8	-	-	-
3.6	-	-	-
2.4	-	-	-
1.2	-	-	-
0.0	-	-	-

COSEL

Model	MGS301212
Item	Overvoltage Protection
Object	+12V2.5A

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 12[V]	Input Volt. 18[V]
-60	15.72	15.74
-40	15.81	15.82
-20	15.92	15.96
0	16.08	16.11
25	16.30	16.33
60	16.61	16.63
65	16.65	16.69
--	-	-
--	-	-
--	-	-
--	-	-

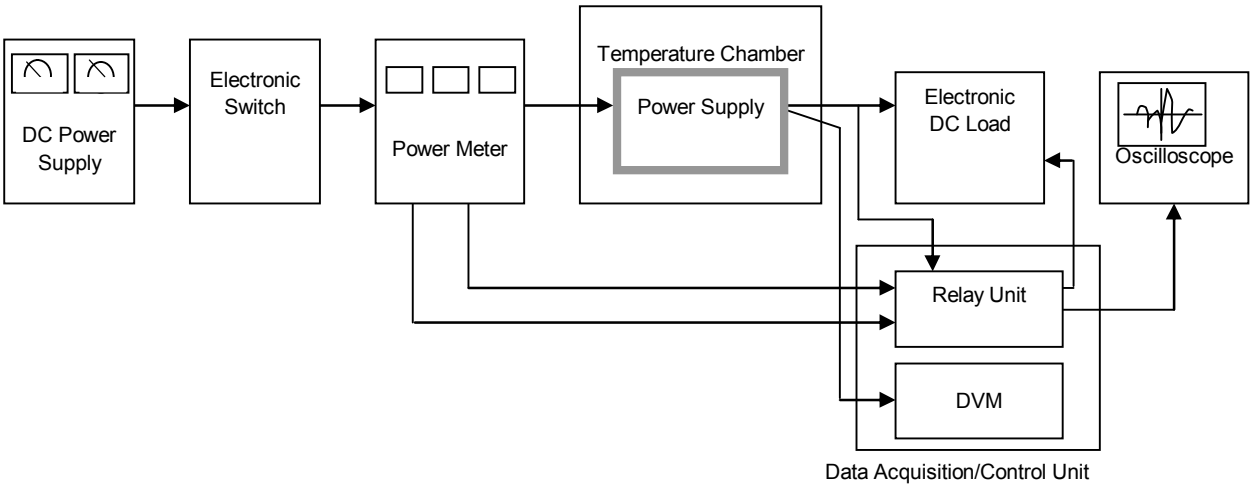


Figure A

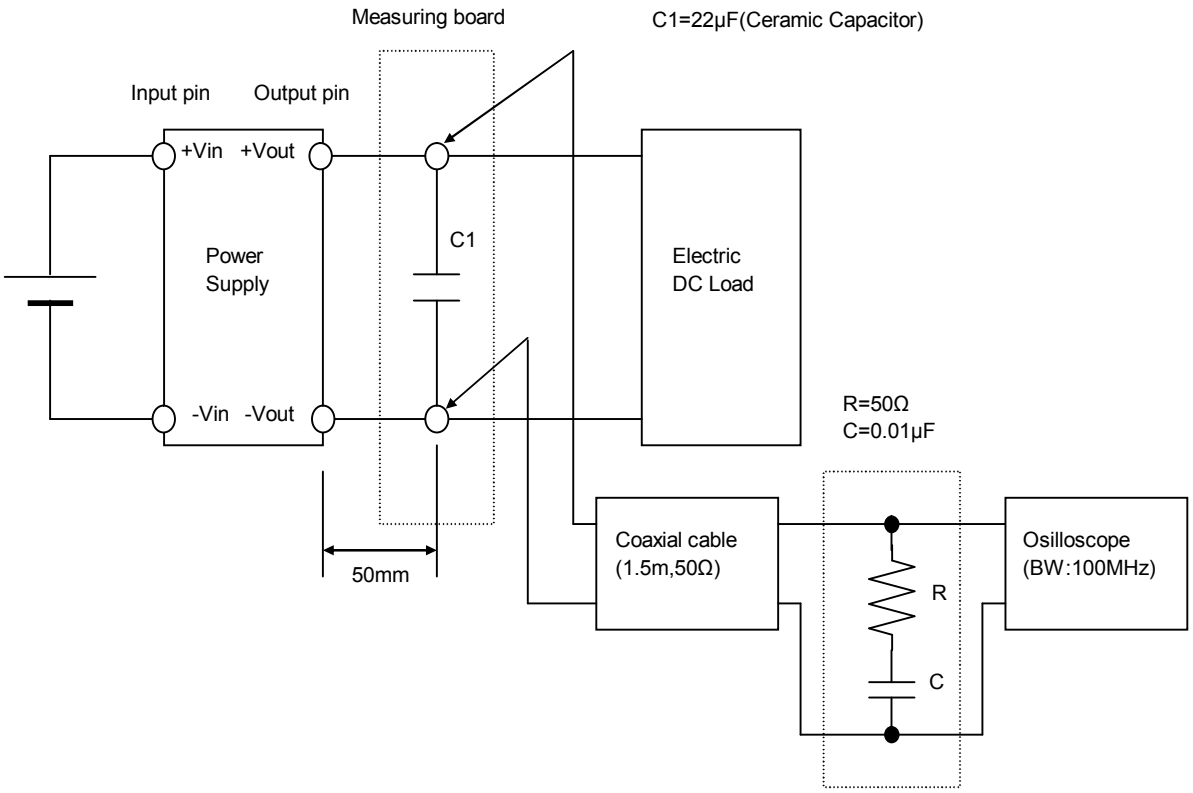


Figure B（Ripple and Ripple noise Characteristic）